

AMENDMENTS TO THE SPECIFICATION

Please delete paragraphs [0017], [0024], [0025] and [0028] and replace the following paragraphs as indicated below.

Please replace paragraph [0013] with the following amended paragraph:

(1) A communication control system for causing a communication station performing communication in accordance with a standard protocol to perform multiplex communication based on time division of a communication band, the communication control system comprising:

a time slot assignment section which divides a communication cycle as a basic cycle of time division into time slots, and assigns a set of communication stations and a type of a communication section to each of the time slots; and

a time-division multiplex communication section which performs communication within a period of the time slot in accordance with the set of communication stations and type of communication section assigned by the time slot assignment section,

wherein each communication station is equipped with a timer section and a time-synchronous communication section,

the type of the communication section includes time-synchronous communication,
the time-synchronous communication section performs time-synchronous
communication by using the time slot in which the time-synchronous communication is
assigned, and

when the time-synchronous communication section transmits a time-synchronous
communication frame to each communication station, time of the timer section of each
communication station and the time slots of all communication stations are synchronized.

Please replace paragraph [0015] with the following amended paragraph:

(3) The communication control system according to (1) or (2), wherein the type of the communication section includes at least one of ~~time-synchronous communication~~, 1-to-N non-cyclic data communication, 1-to-N cyclic data communication, 1-to-1 non-cyclic data communication and 1-to-1 cyclic data communication.

Please replace paragraph [0023] with the following amended paragraph:

(11) The communication control system according to (1), wherein the communication section is a communication section for performing 1-to-1 non-cyclic data communication and a negative acknowledge type communication, and

the communication section includes:

a data transmission section for transmitting a data packet with a sequence number being attached, the sequence number being changed for each transmission; and

a data reception section which checks a sequence number being attached to a data packet each time the data packet is received, and transmits a negative acknowledgment packet to a transmitting station when detecting a lost sequence number as a result of checking,

wherein the data reception section attaches a sequence number specifying the data packet that is received normally at the latest to the negative acknowledgment packet,

when the data transmission section receives the negative acknowledgment packet, the data transmission section sequentially retransmits data packets starting with an undelivered data packet being specified by the sequence number attached to the negative acknowledgment packet,

when the data transmission section does not transmit a subsequent data packet for a predetermined time on completion of the transmission of the data packets, the data transmission section transmits a delivery acknowledgment packet to a receiving station, and when a sequence number specified by a returned acknowledgment packet does not indicate the last transmitted data packet, the data transmission section sequentially retransmits data packets starting with an undelivered data packet specified by the returned acknowledgment packet, and

when the data reception section receives the delivery acknowledgment packet, the data reception section returns to the transmitting station an acknowledgment packet to which a sequence number specifying the last received data packet is attached.

Please replace paragraph [00263] with the following amended paragraph:

~~(+411) The communication control system according to any one of (11) through (11), wherein the data reception section performs transmission of the negative acknowledgment packet and the acknowledgment packet independently of the time slot.~~

Please replace paragraph [0027] with the following amended paragraph:

(17) The communication control system according to (1), wherein the communication section is a communication section for performing 1-to-1 cyclic data communication, and the communication section includes:

a transmission requesting section for requesting cyclic transmission of a data packet addressed to a specified communication station by a start request packet, based on a data acquisition request;

a halt requesting section for requesting a halt of cyclic transmission of the data packet by a halt request packet;

a data transmission section which, when receiving the start request packet, starts transmission of a data packet being specified by the start request packet to a communication station of a requesting source in a cycle specified by the start request packet, and halts transmission of the data packet on receiving a halt request packet; and

a data reception section for receiving the data packet,

wherein the data reception section includes:

a plurality of receive buffers each of which stores reception time of the received data packet and the data packet as a pair;

a packet reception section which attaches the reception time to the received data packet and sequentially stores the data packet one by one into the plurality of receive buffers; and

a receive buffer reading section which reads the data packet from the receive buffer having the latest reception time among the plurality of receive buffers, completes readout in a period shorter than the cycle specified by the start request packet, and sends the data packet to a higher-level side.

Please replace paragraph [0029] with the following amended paragraph:

(~~17~~¹³) ~~A~~The communication control system according to (1), which performs time-division multiplex communication by using the time slots for controlling communication among a plurality of communication stations in accordance with a standard protocol, the communication control system comprising:

a plurality of transmission queue sections which exists between predetermined layers of an OSI layer model, is provided for each type of communication and constitutes a queue of transmission packets;

a plurality of reception queue sections which exists between predetermined layers of the OSI layer model, is provided for each type of the communication and constitutes a queue of reception packets;

a transmission section for transmitting packets in the plurality of transmission queue sections in accordance with a predetermined priority order with priority information corresponding to the transmission queue section being attached;

a reception section for distributing and storing received packets in the plurality of reception queue sections in accordance with the priority information; and

a reading section which reads data stored in the plurality of reception queue sections in accordance with a predetermined priority order, and sends the data to a higher-level side.

Please replace paragraph [0032] with the following amended paragraph:

(20) The communication control system according to any one of (13) to 19 or (17), wherein the transmission queue section and the reception queue section exist between a second layer and a third layer of an OSI layer model.

Please replace paragraph [0033] with the following amended paragraph:

(~~21~~¹⁷) The communication control system according to (1) or (17), wherein the standard protocol is UDP or IP.

Please replace paragraph [0034] with the following amended paragraph:

~~As understood from the discussion, the invention has the following advantages:~~

Please replace paragraph [0052] with the following amended paragraph:

At the time point when the data packet b and the reception time t2 are stored in the receive buffer 402b, the reception time t2 is the latest time. The receive buffer reading section 407 reads the data packet b and the reception time t2 from the receive buffer 402b.

In a similar way, the data packet c/reception time t3 pair and the data packet d/reception time t4 pair are read in this order.

The receive buffer reading section 407 completes a readout procedure within a time shorter than the cycle data packets are transmitted (cycle of broadcast communications by the data transmission section 401). Data packets a, b, c, d are read in this order.

Please replace paragraph [0076] with the following amended paragraph:

(6) Sixth embodiment

Fig. 12 is a block diagram showing another embodiment of the invention. Fig. 12 shows an exemplary configuration of communication section provided in the time-division multiple communication section 104.

In Fig. 912, communication section 70 is communication section for performing 1-to-1 cyclic data communications.